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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,624

10/19/2005

Yuki Takahata

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,624	Applicant(s) TAKAHATA ET AL.	
	Examiner Christian A. Hannon	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/19/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted 10/19/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Objections

3. The claims are objected to because they include reference characters, which are not enclosed within parentheses.

Specifically claims 4 & 5 recite "a flexible circuit board 6," it is believed by the examiner this should be changed to "a flexible circuit board (6)."

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 & 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Konishi et al (US 7,020,302), hereinafter Konishi.

Regarding claim 1, Konishi teaches a flat panel speaker unit comprising, within a frame a transparent diaphragm for outputting sound (Column 4, Lines 40-42; Figure 3, Item 30), a vibration generating part for vibrating the diaphragm (Figure 3, Item 40; Column 3, Lines 43-46) and a display device disposed inward of the diaphragm for displaying information (Figure 3, Item 41; Column 4, Lines 37-38), the diaphragm and the display device being stacked with a gap there between so that an image on the display device can be viewed through the diaphragm (Figure 3, Column 4, Lines 39-46), and the diaphragm being fixed to the frame by mounting a peripheral portion of the diaphragm onto the frame (Column 4, Lines 39-46).

Regarding claim 2, Konishi teaches the device in claim 1 wherein the vibration generating part includes a coil and a magnet, either one of which is mounted on the diaphragm and the other one of which is attached to the frame and a plurality of the

Art Unit: 2618

vibration generating parts is furnished opposing a peripheral edge of the display device (Column 3, Lines 16-21; Column 1, Lines 20-26).

Regarding claim 3, Konishi teaches the device in claim 2, wherein locating nubs are formed on the peripheral portion of the diaphragm, and the coils are fitted onto the locating nubs on a lower face of the diaphragm (Column 1, 20-26).

Regarding claim 4, Konishi teaches the device of claim 1, wherein the vibration generating part is arranged outward of the display device, an electric wire or a flexible circuit board extending outward of the frame is connected to the display device or the vibration generating part and a through hole is provided in the frame between the display device and the vibration generating part (Figure 3, Items 40,30 & 41).

Regarding claim 5, Konishi teaches the device of claim 4, wherein the electric wire or the flexible circuit board is drawn outside the frame-through the through hole (Column 1, Lines 23-26).

Regarding claim 10, Sato and Konishi teach the device of claim 1 as an electronic device (Column 1, Lines 5-11; Konishi).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6-9 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (5,764,784), hereinafter Sato, in view of Konishi.

Regarding claim 6, Sato teaches a flat panel speaker unit comprising a vibration generating part including a coil and a magnet, for vibrating the diaphragm, the coil of the vibration generating part being coiled more laterally than vertically, and causing the diaphragm to vibrate by receiving magnetic flux lines, among the magnetic flux lines emitted from the magnet that are diagonal or parallel with respect to the diaphragm (Column 6, Lines 26-32, 38-43, 49-54; Sato). However Sato fails to teach a transparent diaphragm for outputting sound. Konishi teaches a transparent diaphragm for outputting sound. Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Sato with those of Konishi in order to provide for a downsized loudspeaker in order to downsize the overall size of an electronic apparatus.

Regarding claim 7, Sato and Konishi teach the device of claim 6, wherein one of either the coil or the magnet is arranged on a peripheral portion of the diaphragm and the peripheral portion of the diaphragm is thinner than the central portion (Column 5, Lines 6-20; Sato).

Regarding claim 8, Sato and Konishi teach the device of claim 6, wherein a step is formed at the boundary of the peripheral portion and the central portion of the diaphragm (Figure 6; Konishi).

Regarding claim 9, Sato and Konishi teach the device of claim 7, wherein the central portion of the diaphragm is made thicker than the peripheral portion by attaching a reinforcing plate onto the central portion (Column 6, Lines 46-57; Konishi).

Regarding claim 11, Sato and Konishi teach the device of claim 6 as an electronic device (Column 1, Lines 5-11; Konishi).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Toki (US 6,427,017) discloses a piezoelectric diaphragm and piezoelectric speaker.

Saiki et al (US 2003/0003879) disclose a speaker system, mobile terminal device, and electronic device.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



C. A. Hannon

June 14, 2007



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